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TC 2780 MAIL ROOM

a sensor operative to produce a signal indicative of an air inlet depression; [and]  
control logic at the engine controller, the control logic being configured to  
process the sensor signal and to determine an air filter restriction real-time fault condition  
when the air inlet depression falls below a threshold, the control logic being operative to  
produce an output signal at the data link in response to the air filter restriction real-time fault  
condition[.] ; and

a display device having a memory and configured to transmit and receive  
information over the data link, the display device processing the output signal and storing a  
status of the air filter in the memory, and generating an output signal indicative of the status.

5. (Amended) A real-time maintenance alert system for use in a heavy duty  
truck having an engine including a fuel filter at a fuel inlet, and an engine controller [with  
memory] having a communications data link and, the system comprising:

a sensor operative to produce a signal indicative of a fuel inlet depression; [and]  
control logic at the engine controller, the control logic being configured to  
process the sensor signal and to determine a fuel filter restriction real-time fault condition when  
the fuel inlet depression falls below a threshold, the control logic being operative to produce  
an output signal at the data link in response to the fuel filter restriction real-time fault  
condition[.] ; and

a display device having a memory and configured to transmit and receive  
information over the data link, the display device processing the output signal and storing a  
status of the fuel filter in the memory, and generating an output signal indicative of the status.

6. (Amended) A real-time maintenance alert system for use in a heavy duty  
truck having an engine including an oil filter having an inlet and an outlet, and an engine  
controller [with memory] having a communications data link and, the system comprising:

a sensor operative to produce a signal indicative of an oil filter pressure  
differential between the oil filter inlet and the oil filter outlet; [and]

control logic at the engine controller, the control logic being configured to  
process the sensor signal and to determine an oil filter restriction real-time fault condition when  
the oil filter pressure differential exceeds a threshold, the control logic being operative to

produce an output signal at the data link in response to the oil filter restriction real-time fault condition[.] ; and

a display device having a memory and configured to transmit and receive information over the data link, the display device processing the output signal and storing a status of the oil filter in the memory, and generating an output signal indicative of the status.

Q2  
cont.  
7. (Amended) A real-time maintenance alert system for use in a heavy duty truck having an engine including an oil pan, and an engine controller [with memory] having a communications data link and, the system comprising:

a sensor operative to produce a signal indicative of an oil level; [and]  
control logic at the engine controller, the control logic being configured to process the sensor signal and to determine a low oil real-time fault condition when the oil level falls below a threshold, the control logic being operative to produce an output signal at the data link in response to the oil level real-time fault condition[.] ; and

a display device having a memory and configured to transmit and receive information over the data link, the display device processing the output signal and storing a status of the oil level in the memory, and generating an output signal indicative of the status.

10. (Amended) A real-time maintenance alert system for use in a heavy duty truck having an engine including a coolant reserve tank, and an engine controller [with memory] having a communications data link and, the system comprising:

Q3  
cont.  
a sensor operative to produce a signal indicative of a coolant level; [and]  
control logic at the engine controller, the control logic being configured to process the sensor signal and to determine a low coolant real-time fault condition when the coolant level falls below a threshold, the control logic being operative to produce an output signal at the data link in response to the low coolant real-time fault condition, wherein the threshold is sufficiently high such that engine shutdown is not required upon the presence of the low coolant real-time fault condition[.] ; and

a display device having a memory and configured to transmit and receive information over the data link, the display device processing the output signal and storing a

A3  
Contd. status of the coolant reserve tank in the memory, and generating an output signal indicative of the status.

12. (Amended) A real-time maintenance alert system for use in a heavy duty truck having an engine, and an engine controller [with memory] having a communications data link, the system comprising:

a sensor operative to produce a signal indicative of at least one engine condition from the group consisting of: an oil filter restriction condition, a fuel filter restriction condition, an air filter restriction condition, an oil level, and a coolant level in a coolant reserve tank;

control logic at the engine controller, the control logic being configured to process the sensor signal and to determine a real-time fault condition when the engine condition falls outside of a predetermined acceptable range, the control logic being operative to produce an output signal at the data link in response to the real-time fault condition; and

A4  
Contd. a display device [receiving the control logic output signal] having memory and configured to transmit and receive information over the data link, the display device processing the output signal and storing a fault condition status in the memory, the display device having an indicator operative to alert a user of the real-time fault condition.

13. (Amended) A real-time maintenance alert method for use in a heavy duty truck having an engine, and an engine controller [with memory] having a communications data link and, the method comprising:

generating a signal with an engine sensor, the signal being indicative of at least one engine condition from the group consisting of: an oil filter restriction condition, a fuel filter restriction condition, an air filter restriction condition, an oil level, and a coolant level in a coolant reserve tank; [and]

processing the signal with control logic at the engine controller to determine a real-time fault condition when the engine condition falls outside of a predetermined acceptable range, the control logic being operative to produce an output signal at the data link in response to the real-time fault condition[.];

receiving the output signal over the data link at a display device having a memory; and  
storing a fault condition status in the memory.

14. (Amended) The method of claim 13 further comprising:  
generating an alert signal on [a] the display device to alert a user of the real-time fault condition.

15. (Amended) A display device for use with a real-time maintenance alert system for a heavy duty truck having an engine and an engine controller [with memory] having a communications data link, the display device comprising:

a housing;

a interface configured to communicate with control logic at the engine controller over the data link, the control logic being configured to process a sensor signal indicative of an engine condition from the group consisting of: an oil filter restriction condition, a fuel filter restriction condition, an air filter restriction condition, an oil level, and a coolant level in a coolant reserve tank, and the control logic being further configured to determine a real-time fault condition when the engine condition falls outside of a predetermined acceptable range, the control logic being operative to produce an output signal at the data link in response to the real-time fault condition, the interface receiving the output signal; [and]

a memory for storing a fault condition status based on the output signal; and

an indicator device affixed to the housing and in communication with the interface, the indicator device producing a visual indication when the output signal corresponding to the real-time fault condition is received at the interface.

20. (Amended) The display device of claim 15 wherein the indicator device comprises:

a light emitting diode.